

[0039] The second hinge 42 has a circular tube form with the same diameter as the first hinge 40, and is inserted into the second tubular body 36 at the left side of the drawings. Two key grooves 42A, which extend in the axial direction at a circumferential face of the second hinge 42, are formed with a spacing of 180°. Two keys 36A, which engage with the two key grooves 42A, are formed with a spacing of 180° at an inner circumferential face of the second tubular body 36. Accordingly, the second hinge 42 is non-rotatable in the second tubular body 36.

[0040] The second hinge 41 of the hinge 39 has a circular tube form with the same diameter as the first hinge 40, and is inserted into the second tubular body 36 at the right side of the drawings. Two key grooves 41A, which extend in the axial direction at a circumferential face of the second hinge 41, are formed with a spacing of 180°, and engage with two more keys 36A, which are formed with a spacing of 180° at the inner circumferential face of the second tubular body 36. Accordingly, the second hinge 41 is non-rotatable in the right-side second tubular body 36.

[0041] At each rotation shaft 44, a screw portion 44A is formed at one axial direction end portion and a head portion 44B is formed at the other axial direction end portion. The rotation shafts 44 pass through the first hinge 40 and second hinge 42 of the hinge 38, and the first hinge 40 and second hinge 41 of the hinge 39, respectively, and the rotation shafts 44 screw into the base faces 34B of the first tubular bodies 34.

[0042] The compression coil springs 46 are disposed between the second hinge 42 and the corresponding head portion 44B and between the second hinge 41 and the corresponding head portion 44B, respectively, and urge the second hinge 41 and the second hinge 42, respectively, towards the first hinges 40.

[0043] A cam 43 and cams 45 are formed at, respectively, an abutting face 40B of the first hinge 40 and an abutting face 42B of the second hinge 42. The cam 43 is a protrusion with a taper form in cross-section, and the cams 45 are grooves with taper forms in cross-section, which engage with the cam 43.

[0044] As shown in FIGS. 6A and 6B, the cam 43 extends from an end face of the abutting face 40B to an end face at an opposite side of the abutting face 40B, transiting across a hole 40C. The two keys 34A are arranged along a direction of thickness of the second casing body 18, and the cam 43 extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves 40A. That is, in the state in which the first hinge 40 is inserted into the first tubular body 34, the cam 43 extends in a direction substantially intersecting the thickness direction of the second casing body 18.

[0045] As shown in FIG. 7A, the cams 45 are structured by three cams, a first cam 45A, a second cam 45B and a third cam 45C, which extend from an end face of the abutting face 42B to an end face at an opposite side of the abutting face 42B, transiting across a hole 42C. The two keys 36A are arranged along a direction of thickness of the first casing body 14, and the first cam 45A extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves 42A. That is, in the state in which the second hinge 42 is inserted into the second tubular

body 36 at the left side of FIGS. 4 and 5, the first cam 45A extends in a direction substantially intersecting the thickness direction of the first casing body 14.

[0046] The second cam 45B extends at an angle approximately 30° in an anti-clockwise direction of the drawing relative to the first cam 45A, and the third cam 45C extends at an angle approximately 30° in the anti-clockwise direction relative to the second cam 45B.

[0047] As shown in FIGS. 4 and 5, another cam 43 and cams 47 are formed at, respectively, another abutting face 40B of the first hinge 40 of the hinge 39 and an abutting face 41B of the second hinge 41. This cam 43 is as described above.

[0048] The cams 47 are grooves with taper forms in cross-section, which engage with the cam 43. As shown in FIG. 7A, the cam 47 is structured by three cams, a first cam 47A, a second cam 47B and a third cam 47C, which extend from an end face of the abutting face 41B to an end face at an opposite side of the abutting face 41B, transiting across a hole 41C. The first cam 47A extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves 41A. That is, in the state in which the second hinge 41 is inserted into the second tubular body 36 at the right side of FIGS. 4 and 5, the first cam 47A extends in a direction substantially intersecting the thickness direction of the first casing body 14.

[0049] The second cam 47B extends at an angle approximately 30° in a clockwise direction of the drawing relative to the first cam 47A, and the third cam 47C extends at an angle approximately 30° in the clockwise direction relative to the second cam 47B.

[0050] In the state in which the first casing body 14 and second casing body 18 are closed up, the cam 43 of the first hinge 40 of the hinge 38 engages with the first cam 45A of the second hinge 42, and the cam 43 of the first hinge 40 of the hinge 39 engages with the first cam 47A of the second hinge 41. In this state, the second hinges 41 and 42 are urged against the first hinges 40 by the compression coil springs 46, the hinges 38 and 39 are locked, and there is no looseness between the first casing body 14 and the second casing body 18.

[0051] When the second casing body 18 is opened out from the closed state, an angled surface of the first cam 45A of the hinge 38 pushes against an angled surface of the corresponding cam 43, and an angled surface of the first cam 47A of the hinge 39 pushes against an angled surface of the corresponding cam 43. As a result, engagements of the first cam 45A with the cam 43 of the hinge 38 and of the first cam 47A with the cam 43 of the hinge 39 are released, and the hinge 38 and hinge 39 become rotatable.

[0052] When the second casing body 18 has opened to 120° from the closed state, the cam 43 of the first hinge 40 of the hinge 38 engages with the third cam 45C of the second hinge 42, and the cam 43 of the first hinge 40 of the hinge 39 engages with the third cam 47C of the second hinge 41.

[0053] When the second casing body 18 opens a further 30° and reaches a state of having been opened to 150° (another rotation position), the cam 43 of the first hinge 40 of the hinge 38 engages with the second cam 45B of the second hinge 42, and the cam 43 of the first hinge 40 of the